I020713

Re: Fw: Florida and Kansas Clinical Cases

Nicholas Mastrota to: Norman Spurling 05/04/2009 06:11 PM

Here they are. --Nick

CC037-09 Kansas Badger Kill.pdf CC042-09 FL Key Deer Kill.pdf

Norman Spurling Nick, Somehow the attachments on this were de... 04/30/2009 05:29:38 PM

From: Norman Spurling/DC/USEPA/US
To: Nicholas Mastrota/DC/USEPA/US@EPA
Date: 04/30/2009 05:29 PM
Subject: Re: Fw: Florida and Kansas Clinical Cases

Nick,
Somehow the attachments on this were deleted before I received it . Could you resend it? Thanks.

Norman Spurling
6(a)(2) Coordination and Analysis Team Leader
OPP/ITRMD/ISB
703-305-5835

Nicholas Mastrota Norman, Please process the two attached incide... 04/17/2009 10:48:10 AM

From: Nicholas Mastrota/DC/USEPA/US
To: Norman Spurling/DC/USEPA/US@EPA
Date: 04/17/2009 10:48 AM
Subject: Fw: Florida and Kansas Clinical Cases

Norman,

Please process the two attached incident reports for IDS and provide me with the assigned I numbers as soon as possible. The first incident in particular is of major significance because it involves the death of an endangered species, the Key Deer. Thanks.

Nick

----- Forwarded by Nicholas Mastrota/DC/USEPA/US on 04/17/2009 10:45 AM -----

From: Jeanenne Brewton <brewton@uga.edu>
To: Rattner <barnett_rattner@usgs.gov>, Nicholas Mastrota/DC/USEPA/US@EPA
Date: 04/16/2009 04:57 PM
Subject: Florida and Kansas Clinical Cases

Attached are the necropsy and laboratory results for two reports:

CC42-09- Key Deer - The final diagnosis is anticoagulant rodenticide (Brodifacoum and Difethialone) toxicity.
CC37-09 - Badger - The final diagnosis is anticoagulant rodenticide (Chlorophacinone) toxicity.

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Please let me know if you need more information on these reports.
Thanks.

--
Jeanenne Brewton
SCWDS
College of Veterinary Medicine
The University of Georgia
Athens, Georgia 30602-4393
Phone: 706-542-1741
FAX: 706-542-5865

[attachment "CC042-09.pdf" deleted by Nicholas Mastrota/DC/USEPA/US]
[attachment "CC037-09.pdf" deleted by Nicholas Mastrota/DC/USEPA/US]

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DIAGNOSTIC SERVICES SECTION

FINAL REPORT

SOUTHEASTERN COOPERATIVE WILDLIFE
DISEASE STUDY (SCWDS)
COLLEGE OF VETERINARY MEDICINE
THE UNIVERSITY OF GEORGIA
ATHENS, GEORGIA 30602-7393
TELEPHONE: 706-542-1741; FAX: 706-542-5865

CASE NUMBER CC37-09
DATE RECEIVED February 5, 2009
DATE OF REPORT March 31, 2009

STATE KS **COUNTY** Logan **AREA**

SPECIES (NO.) Badger (1) **SEX** Female **AGE** Adult **WEIGHT** 5.3 kg

CASE HISTORY: The frozen carcass of a badger was submitted by Jim Pitman of the Kansas Department of Wildlife and Parks. This badger was found dead in proximity to a black-footed ferret release site, approximately one-half mile from a prairie dog poisoning site.

This carcass was submitted for necropsy and ancillary testing as needed. It was received at SCWDS on February 5, 2009.

FINAL DIAGNOSIS: Anticoagulant rodenticide (Chlorophacinone) toxicity

COMMENTS: The cause of death was severe hemorrhage due to poisoning with an anticoagulant rodenticide. Anticoagulant rodenticide assays revealed a high concentration (4.4 ppm) of chlorophacinone in the liver. Gross lesions were consistent with this diagnosis.

Chlorophacinone is an anticoagulant poison. It inhibits vitamin K epoxide reductase leading to the depletion of vitamin K that causes death due to uncontrolled hemorrhage. It is a yellow crystalline solid that can be readily mixed with a multitude of potential baits including cereals and fruits. Secondary intoxication through the ingestion of primarily intoxicated species is also common.

The results were reported to Mr. Pitman by electronic mail on March 4, 2009.

WILDLIFE IMPLICATIONS: Wildlife poisonings may occur by direct ingestion of bait. However, secondary intoxication can also occur when scavengers or predators consume prey species that have ingested the poison.

PUBLIC HEALTH IMPLICATIONS: None.

LIVESTOCK IMPLICATIONS: Livestock are susceptible to intoxication by anticoagulant rodenticides, but correct application should limit exposure to livestock species.

DIAGNOSTICIAN John A. Bryan, II
John A. Bryan, II, DVM

SUPERVISOR
Kevin Keel, DVM, PhD, DACVP

DISTRIBUTION: SCWDS File, Hayden, Denker, Kramer, Sexson, Fox, Peek, Hesting, Anderson, Davis, Hanlon, Halstead, Kloft, Pitman, Rattner, Mastrota, McGillivary, Teagarden, Vogt

Laboratory Results Begin on Page 2

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FINAL REPORT

CASE NUMBER CC37-09

GROSS FINDINGS: This is a badger in good nutritional condition with minimal autolysis. There is dark red to black fluid emanating from the anus, consistent with unclotted blood. The thoracic cavity contains approximately 10 mL of dark red fluid, consistent with unclotted blood. The lungs are dark red and edematous. The abdominal cavity contains approximately 10 mL of fluid similar to that found in the thoracic cavity. The intestines have numerous serosal petechiae and ecchymoses throughout their lengths. The descending colon is diffusely dark red. The small intestine contains moderate amounts of dark red material throughout. The colon contains moderate to abundant amounts of dark red fluid, consistent with that seen emanating from the anus. The liver is pale. The spleen is dark red. No other significant lesions are identified.

MICROSCOPIC FINDINGS (W09-81):

Lung: Numerous airways are full of eosinophilic fluid containing erythrocytes.

Esophagus: There is a single protozoal cyst in the cytoplasm of a myofiber (*Sarcocystis* spp.) in the muscularis externa.

Stomach: Numerous rounds worms (presumably *Molineus* spp.) occupy the lumen.

Brain, spleen, trachea, heart, kidney, liver, spleen, salivary gland, and small intestine: No significant lesions were identified in the organs or tissues listed.

MORPHOLOGIC DIAGNOSIS:

Lung: Severe, subacute to chronic, diffuse, pulmonary hemorrhage and edema

Large Intestine: Severe, subacute, diffuse, hemorrhage

Small Intestine: Moderate to severe, subacute, multifocal, petechial and ecchymotic hemorrhage

PARASITOLOGY: The small intestine contains numerous nematodes identified as *Molineus* spp.

TOXICOLOGY: A sample of liver was submitted for anti-coagulant assays. Liver concentrations of the anticoagulant rodenticide chlorophacinone were detected at 4.4 parts per million (ppm).

VIROLOGY: Samples of brain, heart, and lung were submitted for general virus isolation. No evidence of virus was detected in any of the tissues listed. A sample of brain was submitted for rabies virus and canine distemper virus assays via fluorescent antibody. No evidence of either virus was detected.

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DIAGNOSTIC SERVICES SECTION

FINAL REPORT

SOUTHEASTERN COOPERATIVE WILDLIFE
DISEASE STUDY (SCWDS)
COLLEGE OF VETERINARY MEDICINE
THE UNIVERSITY OF GEORGIA
ATHENS, GEORGIA 30602-7393
TELEPHONE: 706-542-1741; FAX: 706-542-5865

CASE NUMBER CC42-09
DATE RECEIVED February 4, 2009
DATE OF REPORT March 27, 2009

STATE FL **COUNTY** Monroe **AREA** Big Pine Key

SPECIES (NO.) Key Deer (1) **SEX** Female **AGE** 2-3 years **WEIGHT** N/A

CASE HISTORY: The frozen carcass of a key deer was submitted by Tom Wilmers of the Florida National Key Deer Refuge. This deer was one of three found over a three month period. This doe was found near a private residence on November 8, 2008.

The carcass was submitted for necropsy and ancillary testing as needed. It was received frozen on February 4, 2009, and a post-mortem examination was performed on February 7, 2009.

FINAL DIAGNOSIS: Anticoagulant rodenticide (Brodifacoum and Difethialone) toxicity

COMMENTS: Brodifacoum and difethialone are anticoagulant poisons that indirectly inhibit vitamin-K dependent blood clotting factors. Death results from severe uncontrolled hemorrhage.

Results were reported to Mr. Wilmers by electronic mail and telephone on March 4, 2009.

WILDLIFE IMPLICATIONS: Wildlife poisonings may occur by direct ingestion of bait. However, intoxication can also occur when scavengers or predators consume prey species that have ingested the poison.

PUBLIC HEALTH IMPLICATIONS: None.

LIVESTOCK IMPLICATIONS: Livestock are susceptible to either primary or secondary intoxication by anticoagulant rodenticides.

DIAGNOSTICIAN John A. Bryan, II
John A. Bryan, II, DVM

SUPERVISOR
Kevin Keel, DVM, PhD, DCVP

DISTRIBUTION: SCWDS File, Haddad, Heller, Breault, Cunningham, Morea, Wilmers, O'Meara, Schulz, Spalding, Rattner, Mastrota, Piccirilli, Holt, AVIC

Laboratory Results Begin on Page 2

FINAL REPORT

CASE NUMBER CC42-09

GROSS FINDINGS: This key deer is good nutritional condition with mild to moderate autolysis. There is a moderate amount of dark red to black fluid (> 100 mL) in the thoracic cavity. Similar fluid occupies the pericardial sac (~ 15 mL). The lungs are dark red and edematous. The heart is flaccid and dark red with similar fluid to that seen free in the thoracic cavity and pericardium. The descending colon is dark red and contains like-colored digesta. Multiple segments of the small intestine contain dark red digesta. The brain is dark red throughout. The spleen is friable and leaks dark red to black fluid when cut. No other significant lesions are identified.

MICROSCOPIC FINDINGS (W09-85):

Lung: Autolysis is advanced; however, the major airways and general parenchyma contain abundant eosinophilic fluid (presumably hemorrhage and edema).

Brain, heart and pericardial fat, kidney, liver, spleen, skeletal muscle, rumen, reticulum, omasum, abomasum, small intestine, large intestine, and uterus: All tissues have extensive autolysis. No significant lesions were identified in the organs or tissues listed.

MORPHOLOGIC DIAGNOSIS:

Lung: Severe, subacute to chronic, diffuse, pulmonary hemorrhage and edema

TOXICOLOGY: Samples of brain, liver, rumen with contents, and kidney were submitted for pesticide assays. A sample of liver was submitted for anti-coagulant assays. Anticoagulant assays of liver tissue revealed a 1.3 ppm concentration of brodifacoum and trace amounts of difethialone. No evidence of organophosphat or carbamat pesticides was identified in any of the tissues submitted.

VIROLOGY: Samples of liver, spleen, and lung were submitted for hemorrhagic disease testing and general virus isolation. No evidence of virus was detected in any of the tissues listed.

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